



**HIT Standards Committee
NwHIN Power Team
Draft Transcript
July 10, 2014**

Presentation

Operator

All lines bridged with the public.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Thank you. Good afternoon everyone this is Michelle Consolazio with the Office of the National Coordinator. This is a meeting of the Health IT, Policy, sorry, Standards Committee's NwHIN Power Team. This is a public call and there will be time for public comment at the end of the call. As a reminder, please state your name before speaking as the meeting is being transcribed and recorded. I'll now take roll. Dixie Baker?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

I'm here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

David McCallie?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Arien Malec? Cris Ross? Keith Figlioli? Josh Mandel?

Joshua C. Mandel, MD, SB – Research Scientist – Boston Children's Hospital

Here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Hi Josh. Keith Boone?

Keith Boone – System Architect – GE Healthcare

Present.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Hi Keith. Wes Rishel? Jitin Asnaani? Ollie Gray? And Kevin Brady?

Kevin Brady, MS – Group Leader, ITL Interoperability Group – National Institute of Standards and Technology

Here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Are there any ONC staff members on the line?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

Debbie Bucci is here.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Hi Debbie and with that I'll turn it back to you David and Dixie.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, thank you and thank you all for dialing in. I did receive e-mails from Keith Figlioli and Arien Malec indicating that they wouldn't be here and Arien sent me a comment about the recommendations that we'll be discussing so I knew that those two were not going to be able to attend. But, thank you very much for dialing in today.

We have two things on the agenda today, the first is we would like to present our...to be able to present our provider directory recommendations at next week's Standards Committee meeting. It seems like it's months since we finished those and we had hoped to finish all three of our tasks and report them all at the same time, but it's taking us so long to coordinate times and work for everyone, etcetera, that I would like to go ahead and present those.

So, right off at the beginning of our meeting we'll present the three recommendations that this group made the draft recommendations and have some discussion and decide whether we're ready to take those forward.

Then, we're going to start, we have a total of three tasks that are assigned to us and we'll go over what those three are, the second one we will start on today which is the task of making recommendations around query for the patient record and the rest of this meeting will be devoted to that, and we're very pleased and grateful to John Feikema and Dragon Bashyam for joining us today and talking about the Data Access Framework, S&I Framework activity which is directly applicable to our query for patient record tasks. And then we'll just have the...we'll conclude with the next steps and public comment.

David would you like to add anything?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

No that sounds good.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, with that let's just move ahead to our provider directory recommendations. Okay, you'll recall we had quite a bit of discussion about provider directories and at the conclusion of that discussion we made just three recommendations and one was that based on our assessment of functional requirements, and we were looking at the functions, that really needed to be met for querying provider directories we didn't know of any standards that were sufficiently mature or implementable to become a national standard.

We felt that the IHE profile, HPD profile, plus profile is a very good start but it needs to be proven within the market place. There have been interoperability showcases, demos of it, but it really has not been widely enough adopted to make it really a candidate as a national standard.

The second was we recommend that ONC encourage the exploration of other simple approaches for implementing the required functionality such as working with CMS to harmonize its RESTful directory approach with FHIR.

Now previously this recommendation...our discussion really focused on, I think this one actually said such as looking at FHIR as a possibility and Arien informed us that CMS actually has an effort underway to look for a RESTful approach and so we thought we should mention that as well because it is certainly in the direction of simpler but it might be more powerful if it were...if it used FHIR, the FHIR standard as well.

And then the third is that we noted that the government has already implemented a directory with the National Provider Identifier, the NPIs, and we thought that it might be worth exploring the possibility of, at least for the short-term, to...you possibly could provide the capability to capture direct addresses using that existing directory. So we recommended that this at least be looked at as a possibility.

So, discussion about these recommendations? Anybody?

Keith Boone – System Architect – GE Healthcare

I don't need to have much discussion I'm pretty much in agreement with them.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, is there anybody who disagrees with any of these recommendations?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dixie, its David.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Do you think they are likely to ask us for any clarifying thoughts that led to these recommendations? Do we need backup details of what our concerns were?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Well, yeah, we'll have a whole presentation that...I mean, for one thing in today's discussion we didn't even explain that the objective is a directory search for the Direct address it's not, you know, that's what you're really searching for.

So, a lot of that material that was in our earlier slides during our discussion we'll have to, you know, work with Debbie to pull some of that as background material together so we won't just present these, yeah, we'll need the context as well.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Good that's what I was thinking some kind of context.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Just because it seemed, you know, out in the blue there a little naked there.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, yeah, yeah, I didn't want to devote the whole...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

We spent considerable time discussing these so I thought that...but if there are any questions about them, you know, for many of you who weren't on that...in those discussions I think all of you were in some part of the discussions, you know, bring them up.

Okay, with that why don't we go to our next slide which I think is the three tasks, reminding us...yeah these are our three tasks and these are the tasks assigned by the ONC, the first one provider directories we'll present our recommendations next week and today we're starting this...we have had a discussion about it because Micky Tripathi from the HIT Policy Committee met with us and explained their thinking and really helped actually focus the task for us tremendously so we'll remind you of what, you know, the kind of direction that he gave us in today's discussion.

And then the third task that we need to undertake after that one is provider data migration and patient portability and Debbie could you tell us a little bit? I know Debbie is doing some research on what this one is asking for; can you give us more clarification about that?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

I think the, I think...I have been doing some investigation and going back into the IE Working Group and they're starting from the Meaningful Use 2 recommendations around C-CDA and seeing for data portability that a possibility of like 30% would...be able to switch providers and things like that to is there additional information that needs to be done about when you switch and that's about as far as I've got, but I'm pretty close.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, it's really a...for a patient to switch from one provider to the other?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

Or a provider to be able to get information, right.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay.

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

And it's really focused around the C-CDA from what I can see, is there additional information needed.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay. So, the information...okay, okay, we had a discussion in the Standards Committee about that and what I guess it was like two meetings ago, is that right, David, where they talked about a lot about whether the C-CDA was the right vehicle to use for that. So, hopefully you're, you know, going to look at that discussion, the notes from that meeting.

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

Yes, I am. I have some of them.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And so this is David, just to clarify that the slide calls out the two core use cases, one, which I think are actually quite different, one is the patient who wants to migrate to a new physician that's kind of a patient initiated transfer of care if you would.

And the second, which is considerably broader I think, is the provider who wants to switch vendors, is that...am I reading that correctly and are we going to consider both of those?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

You are reading that correctly and that was the other piece. And then it also segues back into query again, back to this discussion. So that's what I'm working through.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

What would be the query?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

I guess a query for what information to migrate to.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, yeah that's a good question let's come back to query for the record as to what that means, because I don't know that they're the same, but on the provider...the switching, migration, the bullet number three, so, I mean, the things that I would...I think I would appreciate clarity on is what are the policy drivers that would be behind these, in other words is there a thought that this is a problem that needs to be solved, providers switching EHRs and is it on track to become a testable part of either certification or Meaningful Use in some way, I don't know how it would work for Meaningful Use. I'm just not clear if these are big hard problems why are they on our radar?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

It would be helpful to know that.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah. There was a Meaningful Use, maybe it was a certification criterion, I think it's in 2014 to be able to migrate from one platform to another one, but I'm not sure it actually made it in there. It maybe something that was put on the back burner. So, at any rate today we're going to start on the query for patient record and would you advance the slides, please?

We have some background here. These slides that are in here are summarizing what we learned from Micky Tripathi when he met with us and these new recommendations, the ones that we're looking at, are to enable query exchanges through existing HITECH authority without separate authority to regulate HISPs or HIE organizations or other third-party actors. So, we don't want to really prompt any further regulation.

And it really...everything that he told us really focused on function, it's the function of querying not necessarily a synchronous query transaction like we usually think of query. So, the focus is on enabling provider directory functions within the context of HITECH EHR certification and building on the market developments in both directed exchange using Direct and query exchange. Okay, next slide.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Wait, Dixie, that slide that's probably a typo there for provider directory functions you mean patient query functions, query the record functions. Only point...

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, patient query functions, yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, that's not...we did provider directory already.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, we did, yeah, yeah, patient, yeah, patient query functions. Next slide, please. That's a good catch; let me make a note of that. Debbie, would you note that, that we have a typo on that last slide?

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

Okay.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Maybe we could even correct it, you know, before we post these because that is incorrect, yeah.

Debbie Bucci – Office of Standards & Interoperability – Office of the National Coordinator for Health Information Technology

Okay.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, what the Policy Committee recommended was to be able to...for EHRs systems to have the ability to electronically query external EHR systems for patient medical records. And secondly, to respond to searches for patient information so that EHR systems would be able to respond to queries that they received for specific named patient's electronic records. So, it's not a query for, you know, all the patients that have been served in this clinic, it's a query for David McCallie's records. Next record, next slide, please.

The Policy Committee recommended these principles be used to establish these certification criteria and standards. One is to build on Stage 1 and 2 approaches, what's already there and that, and specifically that infrastructure that comes in at 2014 for directed exchange being required.

Simple, that's always an objective of ours, is having a solution that is simple to use and as simple to implement as possible and simple to adopt.

And the third is generalization to accommodate multiple use cases and workflows and have other policy considerations. There is another typo Debbie that third should be a three I think. Next slide, please, seven.

They see this as being implemented by Stage 3, which is now pushed out to what 2016 is that right?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

2017 isn't it?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

2017 it is, yeah, yeah, yeah that last NPRM was 2017, yes. And again, he emphasized that we're not...they're not asking us to say how the query is done but what standards would support being able to ask whether a doctor has records for a certain patient and then the exchange of those records.

And it should be...the EHR system should be able to use a third-party service to do this like an HIE provider again without changing current policy and, as I mentioned before, it needn't be synchronous it can be asynchronous or synchronous although obviously synchronous query would be desired but we need to set the bar so that either Direct or exchange could be used to provide the query functionality.

So, they're looking for a set of functional requirements and since this is for certification functional requirements that can be tested and certified and ideally that really capitalize on existing standards that are ready for national...to become national standards. Okay, next slide, I think that's it, I believe.

No, the clarify that it was...the search and respond that's what we've talked about, leverage, Direct and Connect wherever possible, the responsibility for patient matching could be assigned to...versus finding the record could be assigned to different...so it could be services provided by two different organizations. So, it's not necessarily the same organization that does the patient matching as well as the search itself, providing the record.

And the standards for content is an open question, exactly what they would be responding with I guess is an open question. They don't want to restrict it to C-CDA they also want to allow for querying for data values for example, they don't want to limit it unnecessarily is what he was really saying. David, do you want to add anything more to these, all these points?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Well, yeah, I mean, I think some of my questions of...fair questions may be at least implicitly answered. You'll remember Dixie that the Tiger Team way back a while ago spent an inordinate amount of time on the distinction between targeted query and non-targeted query.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Right.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And what I'm seeing here is that they're dropping, at least as captured in these slides anyway, dropping that distinction and allowing for what the Tiger Team called non-targeted query sort of implicitly in this last slide anyway because they enabled the notion of an independent third-party identity service and presumably a record locator service.

So, we should clarify that because that's obviously a big technical distinction between, you know, the Tiger Team's definition of targeted query was when the query goes to a known specific end-point and does a patient match one-to-one with that known specific end-point versus the non-targeted query when the provider basically confers with some system and says "do you know this patient and if so where might they have records" and then goes and fetches the record.

So, those are, you know, obviously technically quite different and it sounds to me like we can address both of those. Is that how you read this?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

No, I thought most of what Micky talked about was what the Tiger Team called targeted query. You know not only the name of the person but they have given you the names of places they have gone and received services.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

But given that I think that's not a very effective mechanism in the actual real-world I would really want to clarify that because I think if we don't address the non-targeted model we are missing, you know, essentially the difference between usable systems and not very usable systems. We're severely limiting the usability to specific cases with very tight referral patterns and it just doesn't scale very broadly.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And I interpreted this thing about, you know, independent identity services...

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Well that's just, you know, the...I think it's just the...you know, making sure that you're asking that the record belongs to the right person and that the master person index function should be provided by somebody other than the data holder.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Well, that's a non-targeted query because you're not going to the institution where you know that your target is.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Well, you might be but they might have, you know, a bunch of Dixie Baker's or something that sounds like it, I mean, you know, EMPs are not across multiple organizations.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

But this...

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Especially since Micky kept emphasizing that Direct could be used for this I think it's targeted because Direct you can't do a broadcast e-mail to everybody and say, well I guess you could, but...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

No, no I see where you're coming from...I don't think we're setting the floor, I mean, that's not quite the right way to say it, I mean, if you could use Direct to fulfill some of your needs that's fine, but I'm saying I don't think we should rule out more powerful non-targeted means.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, I think that's the way we should approach it. We shouldn't limit ourselves arbitrarily.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Right, right.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

I mean, Micky, as far as I recall Micky never mentioned targeted versus untargeted that was all within the Tiger Team, right?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah and I'll have to go back and look at my notes from that call with Micky to see if we called out that distinction.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And we can certainly clarify with him, but I would like to think that we're not going to limit ourselves to specifically the case of targeted queries, because frankly Direct...

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes, why don't we...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

...

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Why don't we say we are not going to limit ourselves and then we'll go back to our notes and if there are...well, let's just not limit ourselves and if there are...there exist standards today they can support the non-targeted query in a satisfactory way, functionally we should recommend them.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Does that make sense to everybody else? Do any of you remember something different from our discussion with Micky? Okay, I think that's all of the notes, right?

Go to the next slide, I think we're ready to...oh, here are the possible options where Connect, Direct and the two that Micky mentioned were Connect and Direct, and then we added in subsequent discussions we added well there is FIHR as well, because that's what for example Blue Button Plus uses for its query, and then there are other issues that we may want to talk about one is the trust issues that seem to be occurring in a lot of networks including, you know, with respect to the use of Direct.

And then there is also a new working group, I think, is it a Workgroup, David, that crosses both Policy Committee and Standards Committee and David Co-Chairs it with Micky, and it's looking at the JASON Report and that group is looking at similar issues. David, would you like to say a few words about the JASON Workgroup?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, I think that it's a time limited Workgroup ask or task I guess specifically to respond to the recommendations made in the JASON Report many of which overlap with some of the things that we'll be talking about here with patient query and some of which the JASON's targeted, potentially anyway, towards Meaningful Use Stage 3 albeit perhaps in an unrealistic assessment of how much time that might take.

So, I think Micky and I will produce...our taskforce will produce a recommendation and then we'll be done and it really is limited to responding to the JASON Report itself, which like I say overlaps a lot with what we're talking about here, but it's a different task.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Maybe what we come up with can be useful to that taskforce as well.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, I think, I would hope there are some convergent thoughts. There is yet another taskforce that's a new one that's just about to get created that's focused on the new, I guess re-factoring of our current Workgroups, and it's called Architecture and APIs, and I'm going to be involved with that one apparently and I think Arien is. So, there is a lot of overlap in membership and focus on all of these.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, my understanding is that the JASON Task Force, that's what was sent out to the committee members, was that the JASON Task Force was expected to be the beginning of the Architecture and API Workgroup.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Okay, good then that would make sense.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

To conserve the momentum there.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, yeah that was the official line that went out in the e-mail. Okay, with that...

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Sorry, this is Michelle, I just wanted to confirm and then we'll discuss that more during the Standards Committee next week.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, thank you. All right, with that let's move onto our presentation today about the data access framework and I'll turn this over to John and Nagesh.

John Feikema – Coordinator, Standards and Interoperability Framework – Office of the National Coordinator for Health Information Technology

Perfect, well, thanks very much for taking some time today to walk through this. I know we had a vigorous discussion about it at the last Standards Committee meeting and appreciate the opportunity to dig a little bit deeper into it. And rather than me repeat some of the stuff that I said before I thought what I would do is turn it over to Dragon who is our technical lead on this and let him walk us through this and we're both prepared to answer questions as we go along. So, with that I'll let Dragon drive the bus.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

And just for your information John this Workgroup or this Power Team includes people that are not on the committee so you shouldn't just assume that they have heard that presentation.

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

Sure and I know that there are a couple on that are very familiar with it. I know that we've spent a lot of time in some IT Workgroups and Keith has spent time, but you're right we won't start from assuming everything we'll, you know, give you a good overview.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, thank you, thank you. You probably know who knows what better than I do at this point. Okay.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Thanks, Feik, this is Dragon here. Like Feik said, thank you to all of you for providing us an opportunity to update on DAF. So, if we go to the next slide, I'll just walk through the slides and, you know, please don't hesitate to stop us.

So, just to kind of provide an overview of the Data Access Framework as an S&I Initiative, as many of you know, you know, the Blue Button Initiative certainly is an S&I Framework enabled patients to access their own data so that was kind of the main aim there. Data Access Framework is similar except that it is focused on enabling providers to access their data using modular and substitutable standards and we'll get into a little more discussion about some of the modularity and substitutability as we go forward.

Within the overall context of providers accessing their own data we kind of subdivided the problem into three different types of context, one is accessing the data within their own organization, we call it the local DAF, and basically providers are accessing data from their own systems.

The second being accessing data from another external organization, a single external organization that we call the targeted data access framework, the third being when you're trying to access data from multiple external organizations and that's the Federated Data Access Framework.

The Federated Data Access Framework is currently not in scope in the current work being performed in the S&I Framework that is however on the roadmap and will be part of the scope in the future. So, if we go to the next slide.

So, the Data Access Framework when we looked at the problem there were a set of challenges and complexities that we wanted to address one is, you know, ability to access the data within and across organizations using standards. You know there are many ways that when those do provide but, you know, it's not standardized across organizations or within the organization themselves.

The next part is the ability to access patient's data using multiple different paradigms; one of the paradigms is using document metadata. So, you know, as clinical documents are getting created there is metadata that is getting created and stored in registries and repositories. So, you could access patient's data using just the metadata that is created in a workflow and then get to the actual content of the document.

So, some examples of those types of queries are getting the latest lab report for a patient so that, you know, once I get the lab report I can check the HbA1c level so the metadata here being the type of document which is the lab report.

The next query is getting CCDs for a patient for the last three years. Again, the metadata here being the actual patient and the timeframe in which the CCDs were created.

Then the last example that's in this list is getting the last history and physical note for a patient, again the metadata being the patient and then the type of document being the history and physical notes. So, you're not accessing these documents based on what's within the document, but just the metadata surrounding the document creation.

The other paradigm is the ability to access patient's data based on discrete data values which are captured within the patient record and some of the examples are, you know, similar to last time but now contrasting with the document paradigm you want to get the latest lab report for a patient but only those patients where the HbA1c is actually good within 7% so you're now checking the actual details of the lab report in terms of the data value's captured to make sure that you only retrieve lab reports for those patients where the HbA1c value is greater than 7%.

The next query example is, get me all patients who are less than 5 years and who are due for immunizations. So, you're checking that the patient's age is actually less than 5 years and, you know, they have a pending immunization routine that needs to happen.

The last one is again, get me all patient's data who are greater than 75 years and have an HbA1c greater than 7% so you're checking two different data values one is the age and then the lab value.

So, the difference between the document metadata paradigm and the discrete data paradigm is essentially using metadata in one to get the documents and then look at the documents to decipher what's going on and in the other case you're looking at actual data elements before you and subset and get the necessarily information.

And the other complexity that we wanted to address is essentially like some of the queries indicate we wanted to enable both patient level within the local and targeted environments and also population level which is data about multiple patients within the local environment. We are not dealing with population level queries across organizations we are just dealing with population level queries within an organization. So, that's kind of the challenges that we kind of had outlined for the initiative.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Can I ask some questions or do you want us to save them until the end?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

You can ask David if it's upcoming then I'll let you know and then we can wait for that.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Okay.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yes?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

I mean, you know, I can understand the interest in the population level queries but from our experience of building population health management systems these are such trivial examples that would not anywhere close to come to meet actual real population health capabilities and our...I mean, there would be 15 additional parameters many of which would not even be managed by the EHR necessary to fulfill these in the real world. Are they serious about this being an API for population health services?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, I think I'll give what our committee has provided as input and then Feik you can chime in if you have additional thoughts. So, the word population health management or population health services were not used in the user stories that we came up with.

The primary focus of the user stories dealing with the population was to enable third-party applications which would basically use specific APIs using standards to EMRs to extract the data and then work on the data extracted.

So, examples, for example there could be a medication tracking application that could basically access data about multiple patients from an EHR and then provide valuable tools on medication tracking to the provider on how their patients are doing.

There could be language oriented applications which might be looking at all of the pending appointments and immunizations and so on and so forth for multiple patients, get their data and then figure out what are the needs for each patient to schedule those follow on appointments.

So, the population level queries that we're talking about kind of came up in the context of enabling additional applications on top of the EHR to do various types of specific functions. Now one of those functions could be population health management but our user stories did not get into specific population health kind of use case there. Feik, you have any additional thoughts on that?

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

No, I think you said it very well. One of the biggest drivers was the need for third-party applications who provide, you know, case management and other services within a practice to not have to write an interface for each and every EHR that they end up needing to communicate with.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, so, I mean, this is David again, there is a big difference between these queries which are, you know, lightweight examples of what a population health service itself might deliver versus queries into the EHR about a particular patient to get that structured data about that patient and, I mean, this just seems really messy and blurry to me, but, you know, we'll hold and see where you go with it before going too deep on that.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah.

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

Okay.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Thanks, David. If we go to the next slide, some of the aspects which, you know, the aspects that are out of scope for the Data Access Framework Initiative is one of the big issues which is the trust establishment between organizations, especially for the targeted query, you know, our thought there is we could leverage all the work that is going on in the Direct world and the implementation of Direct in the real world, the trust work going on there, but we have explicitly not addressed any trust or policy framework required for targeted query to happen in the real world.

The second aspect of it is the discovery of end points for targeted query, how, you know, if I want to query from an external organization, a specific external organization, how I can discover that particular end point to query is not in scope for this particular initiative.

The third aspect that we didn't deal with is the specific patient matching rules and the algorithms that organizations may implement. So, when you query for a particular patient from an external organization the exact algorithm that they would use to do patient matching, whether it is...data...or other ways, but that specific rules and algorithms is not something that we deal with, we just provide a mechanism for them to convey the patient's attributes so that patient matching can be executed by the organization but stay away from the actual tools and algorithms.

The last aspect is the specific policies that organizations use before they either allow or disallow disclosure of patient data.

So, those four different aspects, which are very closely. Some of them are very closely related to policy, some of them require policy, some of them require additional technical infrastructure or are essentially out of scope for DAF.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, one of the things that you seem to be assuming, but let me confirm, is that you're querying another EHR organization, you're not querying for example the lab directly, you're querying another provider. Is that right?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

We did not assume either a provider or a lab, or an EHR, we basically called it a Health IT system when we said we are going across an organization that Health IT system could be an EHR, it could be, you know, some other system, it could be an HIE that is proxying for an EHR.

So, we didn't really specifically narrow it down to say it has to be an EHR or it has to be a provider, or it has to be a lab system, we kind of had a broader scope. I don't know if I answered your question Dixie?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Well, I guess I presumed that because you were in the first instance returning a C-CDA and you wouldn't expect a lab system to return a C-CDA or I wouldn't anyway.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, that's why I thought you were assuming that but you're not?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Well, yeah, it's any Health IT system that, you know, implements the standards and opens up the APIs for query. So, if we go to the next slide.

So, this is the current state of the initiative, so those initial few slides kind of gave you challenges that we were trying to address and then some of the complexities around that and this is a state of affairs of the Data Access Framework, and like Feik mentioned some of the members have been actively participating in it and thanks to Keith for helping us on some of the artifacts produced.

So, the first among the artifacts that we are producing or have produced is the work that we performed jointly with IHE organizations. So, the S&I Framework and the IHE worked together with the PCC communities and produced a white paper, we call it the S&I IHE PCC DAF White Paper.

So, the purpose of the white paper was to examine how many of the existing IHE profiles could be used to meet DAF requirements and as part of that work we not only kind of examined how IHE profiles can be used to meet the DAF needs and the requirements, but also identified all of the gaps that exist among the set of all of the IHE profiles that would need to be filled if you needed to comprehensively address data access framework.

So, that white paper is basically under public comment right now. The gaps that we identified in the white paper where standards don't exist we have gone through and prioritized those gaps and we're hoping that prioritization matrix would inform the upcoming IHE planning cycles so that IHE can move forward with that change proposal or new profiles as necessary to address some of those gaps. Again, the whole effort was focused on IHE profiles specifically none of the other things were considered in it.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dragon?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yes?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dragon before you go past that one could you just give me the alphabet soup of the IHE profiles that you roughly are included in this, just high level, is it XDS, XCA?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah it's all the...we have an upcoming slide which kind of is a one slide summary of the whole white paper.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Okay.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, I will share that and if you can hold it for a couple of minutes I think we'll get there.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yes, thank you.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

The second Workgroup was specifically called the S&I Document Metadata-based Access Workgroup. This Workgroup basically said, you know, how do we solve the document metadata-based access paradigm? So, if you want to access documents, clinical documents based on the metadata only what are the standards that we need to use and how do we go about performing the necessary work?

So, we used the IHE white paper as a baseline and then we built on top of that. So, we examined additional standards and finished all of the candidate standards analysis there. We have settled on a stack, a standard stack and we're creating an implementation guide around the standards for document metadata-based access. We have an initial draft of the implementation guide but we still have some pending work there to actually go complete the work.

The third Workgroup basically focused on the use of solving the data element-based access. We are currently performing standards analysis in that Workgroup. We have looked at FHIR, we have looked at HL7 v2, we have looked at QED this past week, we are...we have also looked at HQMF, we have looked at vMR. So, we are in the standard analysis phase there. We'll end up with...similar to the document metadata-based access we will end up with some set of standards that we would be using to enable data element-based access.

Then there is a fourth work stream which is called the DAF Direct Transport Workgroup. This is a community/volunteer-driven Workgroup. What this Workgroup is working on is basically using all of the content models from the document and data element-based access, content models being they could leverage the result structured C-CDA or the query structured...IHE query, or the they could leverage a FHIR resource model that then could be used.

But ideally what they're doing is proving that the substitutability part of the DAF framework works. They're looking at replacing the transport part with Direct, so instead of SOAP or REST, or other access mechanisms that might be dictated by some of the existing standards they're looking at how do we enable all of the Data Access Framework use cases over Direct, re-using all of the query structure or query results and the metadata models that might be re-used. So, that's kind of their charter and like I said they're primary focus is creating the binding for Direct/SMTP and how to transport queries and get results back.

So, that's the four broad areas that we have ongoing work in at various levels of maturity. I'll just dig a little bit deeper like David asked a specific question around each of the Workgroups and give you a few more minutes of information. If we go to the next slide.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

So, the work really has focused on IHE profiles primarily as standards when you mentioned standards in all these you're really looking at IHE profiles.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

No, not necessarily. For the document metadata-based access IHE profiles were one of the main areas that we focused on.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

And the white paper focuses exclusively on IHE profiles, right?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Right.

Keith Boone – System Architect – GE Healthcare

So, Dixie, this is Keith...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, the white paper is exclusively on IHE profiles.

Keith Boone – System Architect – GE Healthcare

This is Keith, so Dixie, the white paper was done by IHE.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

I noticed, yeah, I did notice that, yeah.

Keith Boone – System Architect – GE Healthcare

Okay, so and all it really focused on was how the IHE profiles fit into the Data Access Framework.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

I see, I see that's helpful, yeah, yeah.

Keith Boone – System Architect – GE Healthcare

Yeah and so Dragon and I did most of the work on it, but we had a lot of feedback actually from several folks who were involved in the review of it from both the US perspective but also internationally from Canada and Netherlands, and there was a good deal of discussion of this actually while we were at a meeting in Vienna originally when we were talking about this.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, just wanted to...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And so...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Add onto what Keith just said, you know, the IHE white paper definitely done by IHE focused a lot on the IHE profile, the documented metadata-based access uses a lot of the existing IHE profiles, we'll share that in a minute.

The data element-based access is broader, it not only looks at some of the existing IHE profiles but also looks at existing HL7 standards for example FHIR, DSTU, which currently is not yet a profile in IHE it's a future roadmap, but it's not an existing IHE profile. So, if we go to the next slide.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, that's helpful, I mean, you know just presenting four bullets there you don't get that you know?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, yeah, absolutely.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Thanks.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

This is a notional project timeline; these are all the work streams that were going on, it shows what, you know, what phases of activity are we in. So, if you look at the first work stream which was the S&I IHE giant work we published the white paper and did some comment period.

The second work stream is the document metadata-based access and working on the implementation guide there. And then we go further from that.

Then the third work stream is the data element-based access and we're in standards analysis there as you can see. That's kind of the timeline there. If we go to the next slide.

So, yeah, so now I'll get into a little more detail which is like the alphabet soup for the ones who are curious. This is...

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

One second...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, go ahead?

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

Dragon this is Feik, just one second before you go there, I thought it might be useful to back way up just for a second before you go into the next couple of slides. When we started this project, you know, we were actually coming off of Query Health and the standards that were used in Query Health, you know, HQMF, QED and others, and looking at maybe starting from there and we had a lot of interviews with folks in the field, you know, including one with David with you and Arien where we talked about what was going on and talked about some of our ideas.

And one of the recommendations was we ought to start with things that are more widely deployed and we spent a lot of time looking at the IHE stack mainly because there were pieces of it that were in use and we wanted to take a look at low hanging fruit as a starting point not as an end point or assuming that that's where we'd stop, but there is so much there that we wanted to make sure we understood the full realm of what could be utilized from IHE and which of those may fit and that really generated this slide that you're looking at now that Dragon is going to go the rest of the way through. I just thought that context might help folks.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Thank you.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, thanks Feik, so this particular slide, slide 7 basically summarizes the IHE white paper in a single slide. If you will look, there is a lot of other very good information in the white paper, but this particular slide says, you know, what is the type of data that you are trying to access, which is the first column.

Then the second column says, what is the behavior model that you want to use to access the data whether it's a request/response, publish/subscribe or other behavior models, then the third column basically says, what about the transport protocols that you would like to use.

Then the fourth column basically says, what is the information model on which you're basing the whole query and query results on, and then the fifth column, which is the IHE profile, which has two subcomponents the patient and the population level, basically says which IHE profile best fits the need to access this.

So, this particular table not only identifies, you know, what existing IHE profiles can be used for accessing various information but also identifies all of the different gaps and these gaps like we discussed is now...there is a prioritized list of these gaps with some resource names that would be working with IHE to provide either change proposals or new profile proposals for the upcoming planning cycles.

So, I'll just walked through at a high-level on the rows, for example the patient demographics if you want to use a request/response type of a behavior model you'll have three different options from a transport stand-point that it could choose one is MLLP, SOAP, REST and the information models corresponding to those could be used are like HL7 v2 ADT for the MLLP. For the SOAP version it's the HL7 v3 patient administration model and then for the REST one FHIR patient is basically the patient resource is the information model.

And the corresponding IHE profiles for the patient level access is PIX/PDQ v2 in the first case for HL7 v2 based access of patient demographics. There is PIX/PDQ v3 if you want to do a v3 version. You also could do an XCPD which is the federated version of the v3 model. For REST there is a PDQM profile that's been creating there.

And then at the population level if you want to access patient demographics for multiple patients at the same time, if that was a use case, then that is a gap right now that is not a profile that fills that need. So, similar to that if you go to publish/subscribe you have SOAP and REST as the options and then you have the HL7 v3 model and the FHIR patient resource model, but then the IHE profiles do not address this particular behavior model currently so it's a complete...it's a gap right now. So, there is not an existing IHE profile that meets that.

So, the next one, next subset of information...so we broadly classified the information just to step back into three areas one is information about patients, it includes their demographics and other information. The second set of information is encounter documents and metadata, so this is all of the document paradigm related data. The third set of information is all of the detailed clinical data that is like, you know, the data element-based access.

So, similar to the patient demographics we also again used the request/response and publish/subscribe behavior models to access encountered documents and metadata with access. You can again, choose various types of protocols. If you chose SOAP you have the information model being ebXML RIM+C, ebXML RIM and the IHE profile for a patient level access is either XDS or XCA, and the population is MPQ, multi-patient query.

If you are going to use a SOAP and a REST-based access then the information model would be FHIR along with CDA, then you would...the profile, the appropriate profile that you would use is the mobile health documents profile for patient and then for population it's gap. For an SMTP/Direct type of a transport there is not an existing IHE profile.

Similarly, for publish/subscribe, you know, there is DSUB for the patient level access and the rest of them are gaps currently. So, we go to the detailed clinical data which is the last row and then again if you look at request/response and publish/subscribe you have SOAP and REST and SOAP is based on the HL7 v3 care record standard and the existing IHE profile for patient is QED, for population it's a gap.

For REST FHIR would be the model, information model and it's a gap currently in IHE because there is not an IHE profile there. Similarly for publish/subscribe you have HL7 v3 care record and care management both being the actual profile and then for RESTful access FHIR is the information model but still a gap.

So, that's kind of what was done in the IHE white paper in a nutshell if you will. If you have any questions we'll be more than happy to answer, Keith is also on the line, if not we can go to the other Workgroups and what they have done.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

I have a question, this is Dixie, as David mentioned earlier the Privacy and Security Tiger Team spent a long time looking at query and what would be needed to exchange, to query for a patient record and one of the things that we discussed at length is the need for the provider to at least self-assert a relationship with the patient and also to communicate the purpose of the request. In this work did you consider that in there?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yes.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

And we talked about how that was really essential, you know, for the whole trust.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

It is considered in the white paper and, you know, we dealt with that. Outside of the table, you know, and we definitely outline all of the different profiles for example XUA profile could be used to convey the claims and also purpose of use and a few other attributes that could be necessary to enable queries and policy. So, yeah, it is definitely considered it was just not identified in this table. The table itself is just two dimensional, so, you know, having other access to do that and we'll do that in upcoming slides that DAF is to be used.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, thank you, I do understand. It's already...I had to bring up my own copy to see it.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

If you go to the next slide. So, now we're going the other S&I Workgroups, the second Workgroup that we discussed about which is the document metadata-based access dealing with the document paradigm. So, our abstract model is there is a query requestor, there is a query responder and you send a query from the requestor to the responder and you get some results back at a very high-level that's kind of your abstract model.

There is a set of queries, DAF queries that were outlined in the various use cases that are in this table below. There is a set of DAF supporting capabilities that were also identified as part of those user stories that are already identified in the table and the supporting capabilities are around authentication, authorization and a few other aspects of enabling queries in the real world including security metadata and so on.

So, we discussed at length within the Data Access Framework whether we should have a single stack or multiple query stacks and what we have ended up with is on the responder side we said responders have to support both SOAP and RESTful approaches, which basically gives the option for the requestor to either use SOAP or RESTful stacks to query for information for documents. So, whenever the requestor is trying to access documents they could either use the SOAP query stack and get the information or they could use the RESTful query stack and get the information.

So, that's kind of the optionality on the requestor's side, but the responder's side is a little more overhead and they have to implement both SOAP and RESTful and the reason why we ended up with the decision is, you know, based on our analysis and scan of the community there are a number vendors who are already invested in the SOAP stack with the existing IHE work that they would like to, you know, leverage and continue with so it kind of gives a bootstrap to all of the existing work there.

And we do know that, even from the Standards Committee, that, you know, some of the RESTful approaches is where many of the future vendors are going and new vendors are going in as one of the emerging standards, so we definitely want to consider the RESTful approach and that's kind of why we ended up with a decision to support multiple stacks on the responder's side to make it a little more easier on the query requestor part. So...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

So...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, go ahead?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Let me, this is David, just a comment on that, you know, it's a logical thought but in the real world there is no EHR that would not both be always both a requestor and a responder.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

So, you know, practically speaking you've said both sides have to implement both sets of capabilities and there is so much complexity in that, it may well be the right way to go but there is just, you know, as you know, "or" means "and" from the vendor point-of-view.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Good point David.

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

But David part of the issue is the...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

That did come up...one second Feik, so, yeah that did come up in the discussions too and we also...I mean, one of the ways that some of the committee members felt is, you know, you could use some kind of a gateway that could do both protocols and be layered on top of an EHR for example. So, intermediaries and other aspects would also play a role in that model is one of the other things that also came up in the DAF discussion. Feik, you wanted to add something?

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

Yeah, I was just going to add that not all...while I agree that EHRs are often going to be both requestors and responders there are a lot of requestors that are not likely to be EHRs.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

If we could go to...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah that's an interesting point, I don't know how many...well, whatever, the EHR certification is our target and there is no EHR that will get through without doing both if we follow this rubric anyway.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

If we go to the next slide. So, this particular slide tries to summarize what a SOAP query stack looks like and what a RESTful query stack looks like. And we kind of split the entire query stack into various components of the query, so we split it out into the transport, the message packaging, envelope if you will, message integrity standards that we use, the confidentiality standards that we are using, authentication, access control authorization standards, consent and security metadata, auditing and the actual query structure, the query results and then the APIs that are applicable. So, that's kind of how we split the entire query stack into all of its subcomponents so that we can really drill down into what pieces we're choosing to enable the query stack.

So, if you look at the SOAP side you see primarily the IHE white paper identified a set of all of the candidate IHE standards on how it can be leveraged but what the DAF Document-based Access Workgroup settled on is the SOAP query stack and the RESTful query stack that we outline in this slide.

So, we used HTTP for the SOAP side we used HTTP, SOAP 1.2 TLS, XUA for access control and authorization, only in the case of targeted queries, for local queries it is optional we leave it to the enterprise or the organization to determine what standards they use for access controls and authorizations.

For consent and security metadata, again, follow the local care so we leave it to the organization, for the targeted case we are going to be using DS4P and the existing XDS metadata. And for query structures we settled on XCA, XCPD for the patient level and for the population level, which is within the enterprise only we settled on MPQ and then for the results structure we settled on C-CDA because this is document metadata-based access, you know, based on MU2 work that is ongoing and went to simply maintaining C-CDA that's the most likely candidate where we can get structured information out so that's why we settled on C-CDA.

On the RESTful side the basic stuff you will see is where it is similar like you have a history of HTTP protocol, TLS, mutual TLS for system authentication. When you get to the access control and authorization it's an IHE Internet user authorization profile which is based on OAuth 2 along with the FHIR tags that are necessary for that.

Consent is DS4P plus the FHIR tags for security metadata and then the query structure is IHE MHD v2 not v1, v1 is the existing version of the mobile health document profile whereas v2 is what we went with and the reason for that is the version 2 of the mobile access to health documents is aligning the profile with FHIR document resources.

So, the FHIR document resources document manifest composition, you know, those are all the different FHIR resources and IHE MHD v2 is going to be aligned with that so that's the profile that is currently under work in IHE we are planning to use for the RESTful version instead of creating a brand new profile also, you know, IHE has gone through and done the mapping of an XDS registry, repository type of model and the metadata of that to the MHD profile so we can leverage that.

So, any questions on like the document metadata-based query stacks that DAF has settled on?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Is a mobile...is MHD an actual API or is it the document that's exchanged?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, the MHD...MHD is an IHE profile and it has specific APIs that it provides that one could use.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

But it includes it, okay; okay that's what I was asking, okay.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dixie, basically it's a FHIR wrapper around the XDS core XDS document fields, it's kind of a weird outlier in FHIR because it's not internally consistent with the rest of FHIR but it's consistent at the level of being a resource that can be profiled.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, thank you.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, if you go to the next slide, so that was the document metadata-based access on the data element-based access like I said we are still under standards analysis right now, the analysis that we have performed so far has been FHIR so far, what we did there is we had a set of data elements that we kind of extracted from Meaningful Use Stage 2, ToC, transitions of care and view, download, transmit.

So, we took all of those data elements and there was some committee input that added on top of it and we created this spreadsheets called current data elements DAF data element spreadsheet which has a list of all the data elements and I'll just quickly review what we did there so that people can understand. If you can bring up the spreadsheet, I think which is also one of the attachments that were provided.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Hello, are we still there?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, yeah, I'm still here, I'm just trying to wait for the spreadsheet to come, so I'm not able to see it very well but I know what the spreadsheet contains. I don't know if anybody can see it or not?

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

It was sent out in the e-mail so we can bring it up.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Right, okay, so what we did in the DAF data elements spreadsheet is there are a bunch of columns, the first few columns are extremely important.

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

This is Michelle, is there a specific part of the spreadsheet that you want to indicate because we can zoom in but we just need you to guide us?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, we can stay there for the minute and then I'll tell you when we need to move to the right. So, the first column is basically identifying what are the conceptual domain level data elements that were identified by the DAF committee, MU2 and so and so forth like patient demographics, encounters, problems, allergies and so on, that's the level that the first column describes the data element data.

Keith Boone – System Architect – GE Healthcare

Can you guys hear me now?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes.

Keith Boone – System Architect – GE Healthcare

Oh, great, you haven't been able to hear me for like the past 10 minutes.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Sorry about that Keith.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Can you tell us all the thoughts you had during that time?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

No.

Keith Boone – System Architect – GE Healthcare

Yeah, well...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

We've only got a few minutes left; we've got to keep moving here to get finished.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yes.

Keith Boone – System Architect – GE Healthcare

Well, I understand so real quick just on David's comment, I know of a number of deployments where actually it would be the ambulatory provider who would be querying the hospital and it wouldn't be the hospital querying the ambulatory provider. I also know other deployments where it would go potentially the other way around.

So, it's not always the case that the EHR would have to do both sides in all deployments, but it probably would have to do both sides in a certification context.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah and if it's truly a federated model, you know, the hospital is going to query back to the ambulatory EHR for, you know, information that the hospital needs. I mean, there are use cases where it's one way but it's got to go both ways.

Keith Boone – System Architect – GE Healthcare

It depends on how it gets implemented. It typically gets implemented in a staged fashion where one organizations winds up querying the other and then they flip in the second direction if they're doing a bidirectional sort of capability.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, but what we're doing for example for CommonWell is everybody can query everybody.

Keith Boone – System Architect – GE Healthcare

Yeah.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

And that seems to be the rubric that, you know, it will be ambulatory to ambulatory more often than not in the real world and it could any ambulatory as a query or as a responder if you look...

Keith Boone – System Architect – GE Healthcare

Well and when I say...when I say hospital it's really the...it's the larger delivery networks going out to the ambulatory providers or vice versa.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, but our assumption is just for one assumption which has, you know, gotten some traction is, you know, any ambulatory doctor seeing a patient should have access to the other parts of that patient's records regardless of whether they happen to be accumulated at a hospital.

So, that means essentially every ambulatory talks to every ambulatory. It's just hard to imagine in the real world where any successful EHR vendor not having to do both, which may be where we end up but I'm just saying...

Keith Boone – System Architect – GE Healthcare

Yeah, yeah, yeah I'm not arguing with you I was pointing out deployments don't necessarily start off bidirectional that's all.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Good point, all right. Dragon we've only got a few minutes left.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, I'll just try to wrap this up in about 5 minutes. If you can zoom into the spreadsheet a little bit so that I can see the columns, can you zoom in?

It's not zoomed in. Okay, yeah, so the first column just identified the top level data element conceptually, we call it the conceptual data element via the domain, patient demographics, encounters, problems, allergies, medications and so on.

The data element is essentially the data elements that we drilled down to for query and result purposes, query result purposes. So, these are data elements that are specifically called out either in MU2 or C-CDA as part of the 2014 Regs saying, okay, let's look at all these different data elements within this domain and then if you move to the right, if we can move to the right, there is a set of columns which basically describe, yes, keep moving to the right, I'll skip some of the other columns but people can look at themselves. Yes, stay right there, stay right there for example.

It says for each data element, it says, you know, is it supposed to be used in a DAF query, yes or "Y" in that column basically indicates "yeah, we would like to use this particular data element as part of a DAF query that is created."

Then any candidate standard that we analyzed, we basically said that standards support that query, that particular data element for query purposes. So, for example, in this case we're showing FHIR, does FHIR support the querying of a patient's name and the answer is "yes." And then the column next to that it says FHIR search parameters for query.

So, when a standard supports it if there are some nuances to the standard like it's called as a search parameter or something else then we kind of map it exactly to what the mapping is. So, in this case if you want to query by patient name you have three different parameters that you could use in a FHIR query model, one is name, family name, family, sorry, given. So, those would be our arguments to the...when you're getting the results.

So, we've gone and mapped that, yellow indicates essentially where there are gaps in the standard. Where the standard doesn't either support it for query purposes or it doesn't have it in the model, it could be either of the reasons but from a DAF perspective it's not supported. It doesn't mean that it wouldn't be supported in the future it's just the current state of the DSTU.

If you go a little bit right, I just want to explain the spreadsheet and then we'll zoom back. Similarly, to the query we kind of spread out the query results because some of these data elements may only be applicable for query results and may not be able to be used in a query. So, we indicate "Y" or "N" to say "yeah, it's supposed to be used in query results."

Then any candidate standard that we try to use, for example in this case FHIR, we say "yeah it supports that or it does not support it." And if it does support it what exactly is the mapping, in this case we have a resource mapping that maps the exact data elements to detailed definitions.

So, the purpose of this spreadsheet again is to say, you know, from the user stories and from MU2 what are all the data elements that we want DAF to enable in its first version and any candidate standard that we pick can it support the query of all these different data elements and does it support returning them as results as part of the standard.

So, that was the purpose of the spreadsheet not to define a data model or anything it's mostly to analyze standards and kind of bounce each of the standards against this spreadsheet.

So, if you zoom back out and go back to the PowerPoint, you can look at the spreadsheet in detail later on and if anybody has questions I would be more than happy to answer. If you go back to the presentation slides...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dragon, one...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, go ahead?

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

While we're slide changing, first, you know, as you know I'm sure that, you know, the FHIR abstraction at the resource level doesn't really define which queries are going to be supported you have to get to a profiling level to do that and it maybe things that can be added...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Exactly.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Or things that could be removed. But second question is when you say, query-able are you implying just a simple constraint on that resource, I mean, on that query parameter or are you implying or assuming that there is some kind of joinable query that could be written across resource domains?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

So, in DAF we're interested in both. The standards spreadsheet that we just shared that was just saying, yeah, this is query-able just by itself. So, for example, patient resource allows you to query by name, that's all it did. It didn't try to join that with anything else.

However, in DAF to create useful queries you might join a patient resource with other resources to really come up with a query that works for you in a data element case. So...

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, FHIR doesn't support a joinable model at this point.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah, exactly and we are addressing that also as part of our analysis and, you know, wherever you need joining there is a way to...there is a query resource that could be used but again you have to develop the semantics around that which doesn't exist currently.

So, we're looking at some of those options and you're right there would be a profile required on top of FHIR for any usage of FHIR in the real world, it would not work as it is right now. So, absolutely valid.

If you go to the next slide, so again this is basically trying to give a preview saying if you did use FHIR what would the query stack look like, very similar to what we did with the document access, this is data element-based access and if you basically go back and look at all of the standards it's very similar except that access control and authorization via IHE IUA which is based on OAuth 2 and it's for authorization of resources.

And then the query structure, FHIR queries based on RESTful resources, FHIR query resource may be used along with resource that is explicitly mentioned to the point that David is mentioning and all of this assumes that there will be a FHIR profile created. We would only be able to do this with a DSTU.

The results structure is FHIR resources and so that's kind of where we are, we haven't finished our analysis of all the other standards yet, but, you know, this is just showing if FHIR ends up being a candidate chosen then this is how the query stack would look like, which is basically you would require all these additional add-ons on top of the FHIR DSTU to make it all work in the real world. So, if you go to the next...

Keith Boone – System Architect – GE Healthcare

Dragon?

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Yeah?

Keith Boone – System Architect – GE Healthcare

On this one as I'm looking at this, this is FHIR...this is RESTful QED with a couple of extra things. So, basically one of the gaps that were identified in the IHE white paper was the lack of data element-based access...

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Right, that's correct.

Keith Boone – System Architect – GE Healthcare

And the proposal that is being put together for actually the September/August proposal cycle is pretty much what you see here with the exception of we probably wouldn't necessarily in IHE be covering DS4P. The holes would meet the...the capability to add it would be there but it wouldn't necessarily be part of the profile.

Nagesh Bashyam (Dragon) – Independent Enterprise Systems Architect

Right, yes.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

This is certainly a good discussion and you've given us a lot of detailed information and we really appreciate it, but we do need to get to public comment before the end of this session.

So, I think we're...what do you think David? I think we need to go to public comment and save our...unless we have really critical questions that we need to get out today, I think we need to move forward. David, help me here.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, I agree and unfortunately I have a client commitment at the top of the hour so I'm literally gone in 2.5 minutes.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Yeah, I think we'd better move to public comment but I'm sure that both Feik and Dragon would be more than happy to answer any questions that you may have. In addition it may be best that if you have additional questions you just send them to me and I'll put them together and send them onto them, you know, whatever will work best for you Feik and Dragon would be fine with me.

John Feikema – Coordinator, Standards & Interoperability Framework – Office of the National Coordinator

Sure, just e-mail us that would be fine.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay, okay, I think you're in the invitation, so just e-mail them directly that would be fine. And at our next meeting we will start in on our discussion of potential candidates for recommendations around data query. Okay, Michelle, let's go to public comment.

Public Comment

Michelle Consolazio, MPA – Federal Advisory Committee Program Lead – Office of the National Coordinator for Health Information Technology

Operator can you please open the lines?

Caitlin Collins – Junior Project Manager – Altarum Institute

If you are listening via your computer speakers you may dial 1-877-705-2976 and press *1 to be placed in the comment queue. If you are on the phone and would like to make a public comment please press *1 at this time. We do have a public comment. Martin, please proceed.

Martin Prah! – Health IT Consultant, Accenture - Social Security Administration

This is Marty Prah!; I'm a contractor with Social Security. I just wanted to comment on the possible options and considerations that were presented where you present Connect. Connect is an implementation of the eHealth Exchange specifications which are based on IHE and also Connect also is an implementation of Direct. I think you may want to correct that to IHE as far as lining up with the other possible considerations such as Direct, FHIR on the same line of the specifications and standards. That's all I have.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Yeah, I agree that Connect is not the right term there.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Thank you.

David McCallie, Jr., MD – Senior Vice President, Medical Informatics – Cerner Corporation

Dixie, I've got to run, thanks everybody.

Dixie B. Baker, MS, PhD – Senior Partner – Martin, Blanck & Associates

Okay. Yes, thanks to everybody for dialing in and most particularly our sincere thanks to both Feik and Dragon for a most informative and most detailed. We really appreciate the enormous amount of information you...detail that you provided today. So, thank you very much both of you.

All right and I'll work with Debbie to schedule an additional meeting the next time for us to really start our discussion. At that time we'll also have more clarification about the extent of query that we're intended to address. Thank you all. Bye-bye.